WA-Trans Steering Committee Meeting Notes
July 24, 2006

Attendees:

Member	Association	Representing
Tareq Al-Zeer	WSDOT	WSDOT
Sam Bardelson	US Geological Survey Washington Liaison	The National Map
Chuck Buzzard	Pierce County GIS	West side local government
Tami Griffin	WSDOT Geographic Services	WA-Trans (Project Manager), Facilitator
Jason Guthrie	Lincoln County	County & City Governments
Michael Leierer	WSDOT Geographic Services	WA-Trans (Assistant Project Manager/ Technical Lead)
Kathy O'Shea	Country Road Administration Board	County Road Administration Board
Dave Rideout	Spokane County Engineers Office	East side local government
Ken Stallcup	WSDOT Contractor	WA-Trans Technical Writer
Cathy Udenburg	Walla Walla County	County & City Governments
Ian Von Essen	Spokane County GIS	E-911
Pat Whittaker	WSDOT Transportation Data Office	WSDOT Transportation Data Office

Not Attending:

Member	Association	Representing
Michelle Blake	WSDOT GIS Data Administrator	WSDOT
David Cullom	WA. Utilities & Transportation Commission	Rail And Utility Needs
Kristina Evanoff	Sound Transit	Transit Needs
Wendy Hawley	Census Bureau	US Bureau of Census
Jerry Harless	Puget Sound Regional Council	MPO's, RTPO's
David Koch	WA Department of Information Service	Information Services Board – Project Oversight
Lurleen Smith	Mason County Public Works	West side local government
Elizabeth Stratton	WSDOT	Freight Interests
Tim Young	Washington Department of Fish and Wildlife	Natural Resource Organizations

- Introductions, Status Questions, Time Tracking, Action Item Review
- Final Review Data Provider Interface Business Requirements
- Jurisdictions with no data (information gathered and brainstorm)
- Test Planning Overview
- Database Changes
    - Meta data discussion
    - Addresses
    - Geometries
- City Identifiers
- Funding and Schedules
- Simpler Version of WA-Trans
- Action Item Review and Close

WA-Trans Steering Committee Meeting Notes
July 24, 2006

Introductions, Status Questions, Time Tracking, Action Item Review

The video-conferencing did not work at all. It was a significant issue. As a result of it we used phone conferencing, which many people expressed unhappiness with. Chuck identified that Susan Leffler is not here on Mondays and we seem to have problems with her absence. Next year Tami will schedule our meetings on Tuesday, Wednesday or Thursdays so Susan is here.

Tami introduced Kathy O'Shea from CRAB and explained CRABs participation. It is hoped that we can team up to get funding to pay for the kinds of mapping needed for Mobility and for WA-Trans to have a direct link to CRAB.

Tim Young sent Tami a link to the Spatial Domain Calculator that Tami will pass on to the Steering Committee.

Cathy reported that two of the counties (Whitman, Garfield and Asotin) are developing a GIS transportation layer through WSU Extension. They are starting with TIGER data and aligning it with imagery. Whitman and Garfield are using imagery from Avista and Asotin is using USGS imagery.

Ian reported that Pend Orielle County is identifying existing data and then in November will try to clean up the data using state related data models where possible.

Michael reported that where possible they are trying not to put crosswalk functions in the database.

Action Items: Tami will pass on the Spatial Domain Calculator
Tami will speak with Susan Leffler about video-conferencing problems (again)
Tami will schedule next years meetings so they don't fall on a Monday.

Final Review Data Provider Interface Business Requirements

The Data Provider Business Requirements were reviewed after Michael updated them from the last meeting. **Decision:** The Data Provider Interface Business Requirements were accepted as is. Tami asked participants if they would like to participate in establishing more detailed requirements for web portals for WA-Trans. The Joint Application Development (JAD) Sessions will be held this fall as part of the One-Road pilot in Portland. There is some funds for travel.

Action Item: Let Tami or Michael know if you wish to participate in the JAD sessions for the portals.

Jurisdictions with no data (information gathered and brainstorm)

There was no further work done on jurisdictions with no data. Cathy realized that she misunderstood the purpose of the action item and is now going on the path intended. Ian will continue to monitor the Pend Orielle County experiences and provided lessons learned and strategies for WA-Trans success.

Test Planning Overview

Michael reported on the test plans he and Michelle provided. They don't preclude more extensive testing or specific additional testing. Phase I looks only at Pierce County data. Phase II looks at the two-county data set (King and Pierce). Can we handle each one? How do they connect? There are eight tests of the basic business needs of WA-Trans.

Chuck provided feedback. He felt it looked good. It covers dyn-seg, geo-coding and map production. It covers the basic business needs outlined. This test plan does not include testing the process of downloading data from WA-Trans. Those plans will be written when appropriate. Chuck offered to test overlaying functional class or speed limit and look at where they break using dyn-seg and see if we don't have agreement with geographic location. Geo-coding can be looked at by determining if the geo-coded point from Pierce County file to the WA-Trans export file a and if they don't fall in the same location it is a failure. Projection is an issue for Mike Berman of King County to test. PSRC also uses state plan north. As we move forward we can reuse the plans and compare results over time.

Action Item: Chuck will test as described above.

Database Changes

Tami announced that there were several database changes to discuss and some decisions needed to be made regarding these things to move forward.

Meta Data Discussion

Issues were raised regarding contact information in the database and meta data. WSDOT provided GIS support for people doing GIS because they are not just a data source and they get a lot of questions not related to the data. Do we want contact information from the local government to be readily available in the data for the user directly to use?

It was pointed out that WA-Trans is not like WSDOT. Pierce County would have to remove the internal contact person when it isn't maintained by the GIS office. Their GIS Division screens call. Transportation data doesn't matter for Pierce County because it is maintained by the GIS office. Chuck feels it is fine to provide contact information. But that contact must be the Pierce County GIS Office,

Kathy from CRAB felt she didn't have a clear answer because CRAB doesn't generally provide data. Pat felt the goal was to eliminate questions that aren't appropriate for the data provider and suggested a FAQ page. Jason expressed mixed feelings. He appreciates the need to filter those calls. But he doesn't anticipate receiving many calls regarding his data. He WOULD want to respond to those calls and doesn't have any problem with his contact information being provided regarding Lincoln County.

Ian identified two issues. WSDOT itself has a problem because a lot of knowledge is in Olympia with Michelle. Regional centers (from Ian's experience) have very limited knowledge and seem to be pretty GIS illiterate. Ian feels they should first spent time with the appropriate person in WSDOT and would rather see that occur with WSDOT. He would love to see internal operations at WSDOT get more tightly know with regional people. Down the road when this is a public website it becomes a different animal. First – data is changed by WA-Trans and the county person may not be the expert. He prefers

that WSDOT screen calls and then send them to the data provider if needed. Problems could come from the translation process.

Tami suggest considering both. Provide data providers with the options. Limit the contact when it is needed.

Decision – a WA-Trans contact will always be provided. Provider contact is provided based upon agreement determining from the following options: either provided directly, provided upon appropriate request, not provided at all.

The database has to maintain all contact information provided. It must be stored in the database. We need to retain it and apply it based upon agreement. There should be a flag regarding how the data is distributed.

Contact Information: Organization Name, Persons Name, Phone Number, E-mail address, Physical address. Generally we will only have one contact per county. That way the counties can decide whether they want to make an individuals name available to the public.

We are not talking about eliminating the original providers' metadata. The contact information will still be there.

Addresses

It was announced that we would maintain both address ranges and address points. Ian identified that there is a big trend toward address points. Spokane County is developing an address point layer. Jason is working on improving point addresses.

There is also the question of whether to store theoretical ranges or actual ranges. King County keeps both. We should have theoretical ranges on centerline and actual addresses on the point. From the emergency management point of view actual vs. theoretical you just want to get them to the right location. If the provider has theoretical ranges WA-Trans prefers theoretical ranges. Chuck concurs with use of theoretical because points are actual. That way you get response for sure. Some folks prefer do actuals. (Chuck, Jason and Ian concur with this).

Decision – WA-Trans will select theoretical address ranges whenever they are available. If there is point data for actual addresses that will also be stored. If only actual address ranges are available then WA-Trans will use those.

Geometries

It was announced that the database will allow for multiple geometries.

There was a discussion of the Puget Sound Pilot concerns about coincident geometries. There is a big issue with municipal boundaries. Spokane County keeps them separate because of boundaries deal have alleys. Chuck said he wasn't sure what Andy is talking about with coincident geometry. Sometimes someone has to write code but Chuck has always been able to make it work. Chuck would

like to see examples that show what can't be done. This problem isn't that common in rural areas. This may affect a small per cent of roads in WA-Trans.

City Identifiers

The Puget Sound Pilot found each county has their own city identifiers. This doesn't work well for WA-Trans. We want to use FIPS for WA-Trans. Michael is trying to determine how to do a crosswalk. WSDOT database people don't feel it will work well as tables in a database.

WSDOT used 4 digit city-number. Now it is the FIPS identifier but it will be years. WSDOT has a common city table for a crosswalk. Collision coders get city numbers from the officers. OFM says the official city identifier is the FIPS code. Michael eliminated this from this copy because he didn't realize we use it.

The problem is who maintains this? It becomes a separate process from translation. Spokane County uses a jurisdiction code that is easily convertible but is maintained. Lincoln uses text. FIPS codes aren't intuitive. Walla Walla County uses a sequential number.

Walla Walla can adjust to what we are doing. Jason is willing to add a field with FIPS code. The issue with Pierce County is that we have to add three fields, FIPS code for state, FIPS code for County and FIPS code for city. Do we make a decision if its county we are talking about that the city all zero's? Not too tough for state or county. City could be done by a domain that would populate 5 digit city FIPS and show up as two digits.

Chuck proposes adding these three fields and getting rid of two digit code and then they take care of maintaining that. Pat thinks it could be covered with one field. In the long field you have 53 and nothing else that is state. 53 and county number represents the county jurisdiction. 53, county number and city would show we were talking about the city.

King County has the biggest issue. Mike didn't sound like he was willing to solve it for us. Ian said that to make it less risky on our part, once they are created it becomes more arduous. This gives counties one more reason not to give us the data on time. The county has to notify us if a new city is created. King County uses the same software for emergency management that Walla Walla County uses. They use towns.

If it has a FIPS code it is jurisdiction and if it doesn't it is part of the unincorporated county. Almost every county changes at the boundary.

Michael's proposal: WA-Trans takes care of the crosswalk, etc. for the Puget Sound Pilot. For the next pilot we may have to figure out something else. Chuck feels that is okay for now. The thing we need to settle on is the city code for unincorporated. Chuck proposed assigning duplication of county code into city code. Then if you have a road that runs along county boundary you can identify it. We either include all the elements or we use county and city code. Chuck thinks we may need to use all the elements just to be safe.

The FIPS place code has to do with the real estate rather than who maintains the roadway. Unincorporated areas have "0" for city code. Dave Rideout identified two things to think about: 1. What city is it in? 2. Might be capturing who maintains it? We are not trying to capture who maintains it but more "where it is". Comment – Spokane has roughly 20% are within a city.

Cathy brought up querying. How will it be used and how will we query it.

Decision: WA-Trans will take care of conversion for Puget Sound Pilot, but we want to make sure the conversion goes both ways. The data provider can pull down the data their way. Once we move into something else we will look at this again.

Ken – since we have all of these resources from different counties, shouldn't the Puget Sound Pilot be general solutions. Michael is trying to put this on the back burner so we can get to a more important problem.

Funding and Schedules

Tami provided a high level schedule and potential and actual funding sources. She reminded everyone that we could parallel some activities if we had funding. There were no comments or questions.

Simpler Version of WA-Trans

Tami brought up a suggestion by George Spencer that we consider a solution that allows us to have the deliverable of a "simpler" statewide solution earlier. This would facilitate a usable product sooner and maybe lead to better funding as there is concern about the length of the project.

Comments:
For a statewide thing to work at all we have got to have some quasi viable translator. It would be wasting resources to do it manually. Come back to George and say first milestone, end of December. Need to have another date for when the WSDOT piece is incorporated and they have used it then you look at what is involved with going statewide. Otherwise we do something that takes a ton of resources and isn't maintainable.

We must be testing it before we know it will work. DON'T do more until we are farther along.

Cathy – can we visualize what the difference is? Show possible sets so they can see what the benefit is. Take one attribute that I know is inconsistent and find out how the field is formatted and how they deal with it. Archive to get the data before we started the pilot so we can show what has been done.

Ian said it is typical for upper level management, when are you going to provide me with a product and how will it make their life easier. Right now we have funding for the Puget Sound Pilot. Talk about the things we ARE delivering and talk about the things we need to be successful.

Next meeting and Action Item Review

October 23, 2006
9:00 – 12:00
Olympia

Video-conferencing will be available from Olympia and Seattle.

Appendix A - Data Provider Business Requirements

1.0 Data Submission

1.1 A data provider will be able to submit data to WA-Trans through an Internet Portal.

1.2 The data provider internet interface must work for any of the standard WC3 compliant browsers and browser configurations.

1.2.1 The list of browsers currently being considered includes: Internet Explorer (the WSDOT standard), Netscape, Firefox and Opera.

1.3 ADA issues need to be considered in the Internet interface visual and functional design.

1.4 A data provider will need to fill out a submission form that allows the ability to enter/update provider information.

1.4.1 Data Providers must submit information, which will allow the portal the ability to link back to individual data providers.

1.5 A data provider will be able to re-project data in disparate coordinate systems into a common spatial framework.

1.6 All new data providers will need guidance in some form (e.g. a wizard) when submitting data for the first time.

1.6.1 We may not be able to replace manual processes with automated ones as much for the first submission.

1.7 The requirements for submission of data will be communicated to the data provider through the data provider interface.

1.7.1 Communication of requirements for submission can include:

- *Links to pertinent documents*
- *On line Help files*
- *Tutorials*
- *Directions included in the user interface*
- *Wizards*

1.7.2 There is concern that we not have too stringent requirements for submission. It is felt that we want the data even if we have to initially do a lot of post-processing, especially if it is the only data for that jurisdiction or mode.

1.7.3 As of 2008 there will be a good base of data for many jurisdictions from the US Census Bureau. This will provide a basis for those jurisdictions with poor data.

1.8 The data provider must satisfy the designation as the preferred provider for the data they are submitting.

1.8.1 The first cut of who is responsible is the jurisdiction.

1.8.2 If another agency has better data and the "data stewards group" agrees it is better data then we need to consider using it.

1.9 After a data provider's first submission process is completed successfully the groundwork will be established for future submittals to be handled by the data provider interface in a more automated manner for that data provider.

1.10 The data provider will be able to view the status of their submission in the user interface.

2.0 Data Schema and Translation

2.1 Data providers have a significant investment in their GIS data models and schemas. They will not be required to abandon these schemas or to incorporate the WA-TRANS data model into their systems.

2.2 Data Providers will be able to provide data in a local format/schema as input, which is processed through translation and QA/QC processes and output to the WA-TRANS format/schema and data model.

*2.2.1 Data Providers will be able to input their data from GIS data models that only include: *.shp, *.dgn, *.dxf, *.dwg, geodatabase (mdb), XML, *.xls. This input must be defined by the data provider.*

2.3 Established data translators will need to be maintained for repeat data providers (e.g. a Pierce County data translator).

2.4 The understanding was the translator would do the translation and then handle processing post translation so less customization is required in the front end. Maybe some very minor checks at the front end to make sure the data will translate. The group feels there needs to be very limited up front preprocessing.

3.0 Data Accuracy

3.1 Node, point and line features will have <u>single</u> precision coordinates. NOTE: This is due to ESRI SDE restrictions in version 9.1. Accuracy is expected to increase in later releases.

3.2 The following values are the target standards for accuracy:

	Urban			*Rural*			*Remote (ag/forestry)*		
	High	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*

Spatial Accuracy	*1 ft.*	*5 ft.*	*40 ft.*	*5 ft.*	*40 ft.*	*50 ft.*	*40 ft.*	*50 ft.*	*100 ft.*
Update Frequency	*1 mos.*	*6 mos.*	*1 yr.*	*1 yr.*	*2 yrs.*	*3 yrs.*	*1 yr.*	*2 yrs.*	*5 yrs.*
Attribute Completeness	*95%*	*80%*	*70%*	*95%*	*80%*	*70%*	*N/A*	*N/A*	*N/A*
Source Scale	*1:1200*	*1:6000*	*1:24 K*	*1:6000*	*1:24 K*	*1:48 K*	*1:24K*	*1:48K*	*1:100K*

3.3 Vertical Datum is NGVD 88, although WA-Trans is not currently retaining vertical data.

4.0 Data Validation

4.1 Information submitted by data providers will be checked for errors and omissions.

4.2 Information submitted by the data provider must meet the minimum criteria for the content of provided information.

4.2.1 WA-Trans will define which data attributes are required.
4.2.2WA-Trans will define the information required for an acceptable submittal of data, e.g. submittal must include metadata, provider information, data files and file formats.
4.2.3 WA-Trans will define which attributes will be accepted as a percentage of completeness. An example for data completeness is a county in which the data has good spatial accuracy but no addresses.

4.3 The data submission process must be subject to a QC/QA process to validate data input for WA-TRANS.

4.4 Data validation must be performed before any data is accepted by WA-Trans from a data provider.

4.5 The Data Provider Interface will provide as much validation as can reasonably be expected from an Internet user interface. E.g. Provide required data entry options and directions.

4.6 The data provider will receive error communication, through the data provider interface, of any validation issues discovered by the user interface, or the QA/QC process and suggested processes to remedy the identified problems.

4.6.1 The error communication a data provider will receive can include but not be restricted to:

- *Internet report through the user interface.*
- *Links in the user interface to error logs and reports.*
- *References to help files.*
- *Contacts for assistance.*

4.6.2 The data provider will be able to view a report detailing/listing:

- *Failed records*
- *Records/data accepted by WA-Trans*
- *Records/data rejected*
- *Records/data discarded*

4.7 Data validation specific to the mode of data being provided will include but not be restricted to:

- Metadata
- Ramps – need to identify WSDOT naming convention.
- Bridges and culverts – eventually we would like them to be segmented the bridge at the beginning and end, but right now they can be events.
- Aviation – airport location, runway segments, connector road
- Boundaries – disclaimer on boundaries as they change regularly and we may not always have the latest. The jurisdiction code will have to change every time we get a new boundary. NOTE: That is a big maintenance issue. Boundaries will include:
    - County
    - Tribal Reservation.
    - City is questionable due to the rate of change but for now include them.
    - Urban Area

5.0 Metadata

5.1 A data provider must provide metadata information related to the data being submitted.

5.2 Metadata submitted must conform to the current FGDC/WAGIC and WA-Trans metadata standards (see the WA-Trans Standards document).

5.3 For metadata, which does not exist, or is not complete, according to the standards (see 5.2), the Data Provider Interface will provide the ability for a data provider to enter and/or edit metadata.

5.4 A metadata submission must be subject to a QA/QC process (See 4.0 Data Validation).

5.5 Metadata submitted must have the required information filled out in these metadata areas, meeting WA-Trans Standards:

- Identification
  - What is the name of the data set? Who developed the data set? What geographic area does it cover? What themes of information does it include? How current are the data? Are there restrictions on accessing or using the data?
- Data Quality
  - How good are the data? Is information available that allows a user to decide if the data are suitable for his or her purpose? What is the positional and attribute accuracy? Are the data complete? Was the consistency of the data verified? What data were used to create the data set, and what processes were applied to these sources?
- Spatial Data Organization
  - What spatial data model was used to encode the spatial data? How many spatial objects are there? Are methods other than coordinates, such as street addresses, used to encode locations?
- Spatial Reference
  - Are coordinate locations encoded using longitude and latitude? Is a map projection or grid system, such as the State Plane Coordinate System, used? What horizontal and vertical datum's are used? What parameters should be used to convert the data to another coordinate system?
- Entity and Attribute Information
  - What geographic information (roads, houses, elevation, temperature, etc.) is included? How is this information encoded? Were codes used? What do the codes mean?
- Distribution
  - From whom can I obtain the data? What formats are available? What media are available? Are the data available online? What is the price of the data?
- Metadata Reference
  - When were the metadata compiled? By whom?

6.0 Nice to have and other stuff

6.1 The translator needs to identify the local counterparts for the essential WA-TRANS data elements in order to reformat them into the WA-TRANS model.

6.2 A wizard interface would allow the local data steward to approve/change the proposed translations and identify those not found by the automated data audit.

6.3 An ideal software tool would be able to audit a sample of input data, say a ROADS coverage, read its metadata, and propose a translation (e.g. local "Roadname" field to WA-TRANS "Street Name").

WA-Trans Steering Committee Meeting Notes
July 24, 2006
Appendix A

This is a preliminary list of business requirements for a Data Provider interface. This list has been gleaned from the Steering Committee notes and turned into an initial set of data provider interface business requirements.

1.0 Data Submission

1.1 A data provider will be able to submit data to WA-Trans through an Internet Portal.

1.2 The data provider internet interface must work for any of the standard browsers and browser configurations.

1.3 Provide links back to individual data providers.

1.4 ADA issues need to be considered in the Internet interface visual and functional design.

1.5 A data provider will be able to Re-project data in disparate coordinate systems into a common spatial framework.

1.6 All new data providers will need guidance in some form (e.g. a wizard) when submitting data for the first time.

1.7 A data provider will need to fill out a submission form that allows the ability to enter/update provider information.

1.8 We may not be able to replace manual processes with automated ones as much for the first submission.

2.0 Metadata

2.1 A data provider will need to fill out a metadata form that allows the data provider to enter/update metadata.

2.2 A metadata form must feed immediately to a QA/QC tool to validate necessary input.

2.3 There will be provider information and data sets in framework imbedded in the metadata, which will ensure the provider is clearly identified and the data is clearly identified.

3.0 Data Schema and Translator

3.1 Data providers have a significant investment in their GIS data models and schemas. They will not be required to abandon these schemas or to incorporate the WA-TRANS data model into their systems.

3.2 Data Providers will be able to provide data in a local format/schema as input, which is processed through translation and QA/'QC processes and output to the WA-TRANS format/schema and data model.

3.3 Established data translators will need to be maintained for repeat data providers/users (e.g. a Pierce County data translator).

*3.4 Data Providers will be able to input their data from a variety of GIS data models that only include: *.shp, *.dgn, *.dxf, *.dwg, geodatabase (mdb), XML, *.xls. This input must be defined by the data provider.*

3.5 The understanding was the translator would do the translation and then handle processing post translation so less customization is required in the front end. Maybe some very minor checks at the front end to make sure the data will translate. The group feels there needs to be very limited up front preprocessing.

4.0 Data Validation

4.1 The data translator must feed immediately to a QC/QA tool to validate data input for WA-TRANS and identify data problems.

4.2 Any validation issues will need to be communicated to the data provider and processes to remedy the problems provided by the data provider user interface. This will need to be done before any data is accepted by WA-Trans for a data provider.

4.3 We need to define which attributes are required and which attributes we are going to accept a percentage of completeness. An example provided of the issue is Lincoln County in which the data has good spatial accuracy but no addresses.

4.4 There is concern that we not have to stringent requirements for submission. It is felt that we want the data even if we have to initially do a lot of post-processing, especially if it is the only data for that jurisdiction or mode.

4.5 Data validation specific to the mode of data being provided will include:

- *Metadata*
- *Ramps – need to identify WSDOT naming convention.*
- *Bridges and culverts – eventually we would like them to be segmented the bridge at the beginning and end, but right now they can be events.*
- *Aviation – airport location, runway segments, connector road*
- *Boundaries – disclaimer on boundaries as they change regularly and we may not always have the latest. Boundaries will include county and reservations. City is questionable due to the rate of change but for now include them. The jurisdiction code*

will have to change every time we get a new boundary. That is a big maintenance issue.

4.6 The data provider will need to satisfy the designation as the preferred provider for the data they are submitting. The first cut of who is responsible is the jurisdiction. If another agency has better data and the "data stewards group" agrees it is better data then we need to consider using it. Most agencies know who has better data.

5.0 Data Accuracy

5.1 Node, point and line features will have at least double precision coordinates.

5.2 The following values are the target standards for accuracy:

	Urban			*Rural*			*Remote (ag/forestry)*		
	High	*Med*	*Low*	*High*	*Med*	*Low*	*High*	*Med*	*Low*
Spatial Accuracy	*1 ft.*	*5 ft.*	*40 ft.*	*5 ft.*	*40 ft.*	*50 ft.*	*40 ft.*	*50 ft.*	*100 ft.*
Update Frequency	*1 mos.*	*6 mos.*	*1 yr.*	*1 yr.*	*2 yrs.*	*3 yrs.*	*1 yr.*	*2 yrs.*	*5 yrs.*
Attribute Completeness	*95%*	*80%*	*70%*	*95%*	*80%*	*70%*	*N/A*	*N/A*	*N/A*
Source Scale	*1:1200*	*1:6000*	*1:24 K*	*1:6000*	*1:24 K*	*1:48 K*	*1:24K*	*1:48K*	*1:100K*

5.3 Vertical Datum is NGVD 88, although WA-Trans is not currently retaining vertical data.

6.0 Nice to have and other stuff

6.1 The translator needs to identify the local counterparts for the essential WA-TRANS data elements in order to reformat them into the WA-TRANS model.

6.2 A wizard interface would allow the local data steward to approve/change the proposed translations and identify those not found by the automated data audit.

6.3 An ideal software tool would be able to audit a sample of input data, say a ROADS coverage, read its metadata, and propose a translation (e.g. local "Roadname" field to WA-Trans "Street Name").

Appendix B – Test Plan Overview

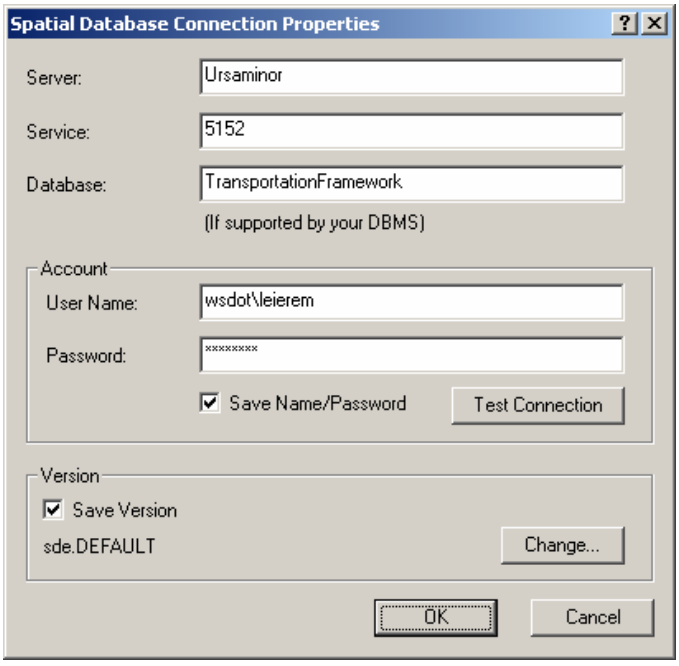
Phase I testing will be performed on a one county dataset. Pierce county data will be inserted into the WA-Trans SQL Geo-Database. Data will be included in the segment tables and the reference point tables. It will be possible to perform the testing using the raw tables and feature classes, but testing should involve the spatial views that are a part of the WA-Trans database. The data is the most current available from Pierce County and CRAB.

Before this test is performed the following must be true:

A. ArcCatalog has a connection to the WA-Trans SQL Geo-Database
B. Data from only one county will be included in the database (in this case it will be Pierce County data).
C. There will be a boundary for the county included as a reference dataset that is not included as data in the Segment Geometry feature class.
D. All current segment, begin and end points and event data for the county will be included in the database.
E. The source files will be available.

Test Setup details

Database Connection in ArcCatalog
The connection properties to the database should be configures as pictured below, only use your own username and windows password.



Data Information
The Feature Classes with data are:
ReferencePoint (the begin and end point data)
SegmentGeometry (road segment geometry)

The detail segment tabular data.
Segment [PK SegId]
SegmentDescription [PK SegDescrId, FK SegId] (includes road names and FK to the segment points in the ReferencePoint feature class; ToSegPtId, FromSegPtId)
SegementDescriprionRoad [PK SegDescrRoadId, FK SegDescrId], (includes address ranges)

All segment point data is included in the ReferencePoint feature class.
ReferencePoint [PK RefPtId] (the relationship to segment data is found in the SegmentDescription table with FK ToSegPtId and FromSegPtId).

The boundary for the county will be included in the …… feature class.
…….[PK…]

Event Data is included in the Event table (this is a tabular table)
Event [PK EventId] (there is no direct database relationship between the Event table and the segment or reference point tables)

All source files are located ……..

WA-Trans Steering Committee Meeting Notes
July 24, 2006
Appendix C

This is a Test Plan for the Puget Sound Pilot. There are six columns:

1.) The Test Steps describe the action a tester is to perform.
2.) Expected Results describe the results expected when the tester performs the test steps.
3.) Actual results are to be recorded by the tester. This can be left blank if the actual results match the expected results.
4.) Suggestions / Corrections are to be recorded by the tester if the actual results need some correction or changes. This column can also have comments about the test step. For Results that do not meet expectations a tester needs to record the results they expect that will allow them to give a passing grade to this test step.
5.) Pass / Fail. The tester can record one of three things in this column.
    a. **Pass** indicates this steps' results are as expected or acceptable without changes.
    b. A **Fail** indicates this steps' results do not meet expectations and testing cannot proceed until corrections are made.
    c. A tester can record a **NME** for **"does Not Meet Expectations"**. This indicates this step does not meet expectations, but you can continue testing.

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NME
Test 1 Phase I					
1.1	Open ArcMap	ArcMap will open on your computer			
1.2	Add the …spatial view from the WA-Trans SQL database.	There should be about 49,000 features included.			
1.3	Create a Map, which includes all segments from the SegmentGeometry feature class.	Road line work will display.			
1.4	Add the source line file to ArcMap. Compare the line work in the map between the source file and the data from the database.	Difference in the line work should be indistinguishable, in ArcMap, between the source and database			

1.5	Create a Map, which includes all segments and the associated street names as labels.	Road line work will display labeled with appropriate street and road names. There should be no difference in the road lines displayed step 1.3 other than the addition of labels.			
1.6	Save map using your name and add "_Test1"at the end.				

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 2 Phase I					
2.1	Use the Map created in Test 1, but save again adding "_Test2" at the end.	Map should display the same data as seen in Test 1 step 1.3.			
2.2	Add the street names as labels. The map will include all segments and the associated street names as labels.	Road line work will display labeled with appropriate street and road names. There should be no difference in the road lines displayed step 2.1.			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 3 Phase I					
3.1	Use the Map created in Test 2, but save again adding "_Test3"	Map should display the same data as seen in Test 1 step 1.4.			

	at the end.				
3.2	Add the address ranges as labels from the SegmentDescriptionRoad table.	1.) The appropriate Address ranges should display with the road line work. 2.) The road segments should display as they did in step 2.2 and 3.1. 3.) The Street label should display as they did in step 2.2 and 3.1.			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 4 Phase I					
4.1	Use the Map created in Test 3, but save again adding "_Test4" at the end.	Map should display the same data as seen in Test 3 step 3.2.			
4.2	Add the alternate street names as labels from the SegmentDescription table. NOTE: Still including the primary names if no alternates exist.	The Map should display exactly as it did in step 4.1 and 3.2, but there should be different names for streets. Need to add the exact street and map areas to look for differences..			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 5 Phase I					
5.1	Use the Map created in **Test 1**, but save again adding "_Test5" at the end.	Map should display the same data as seen in Test 1.			
5.2	Add the Functional Class data as labels to the correct roads.	The Map should display exactly as it did in step 5.1, but there should be a functional class number displayed (Note: All functional class data may not be present in the Event Table.			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 6 Phase I					
6.1	Use the Map created in **Test 1**, but save again adding "_Test6" at the end.	Map should display the same data as seen in Test 1.			
6.2	Add the Speed Limit data as labels to the correct roads.	The Map should display exactly as it did in step 6.1, but there should be a Speed			

		Limit number displayed (Note: All Speed Limit data may not be present in the Event Table.			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 7 Phase I					
7.1	Use the Map created in **Test 1**, but save again adding "_Test7" at the end.	Map should display the same data as seen in Test 1.			
7.2	Add the ADT data as labels to the correct roads.	The Map should display exactly as it did in step 7.1, but there should be an ADT number displayed (Note: All ADT data may not be present in the Event Table.			

Test #	Test Steps	Expected Results	Actual Results	Suggestions / Corrections	Pass / Fail NMA
Test 8 Phase I					

8.1	Use any Map created in any Test, but save again adding "_Test8" at the end.	Map should display the same data as seen in Test for which the map was created..			
8.2	Add the Boundary layer for that county.	The Map should display exactly as it did in step 8.1, but there should be a\ County boundary displayed.			

Appendix C – FIPS City Identifier Issue Document

WA-Trans stores the FIPS City identifiers related to segment descriptions and reference points. The source of the city identifiers are from the data providers files that will be translated to WA-Trans. A problem is encountered during translation with FIPS city identifiers due to the fact that some counties maintain their own city identifier within their data, which works very well for their purposes, but is not a FIPS Identifier.

It is clear there needs to be some process to convert the provided city identifiers to FIPS City identifiers. Crosswalk processes have been proposed. A basic requirement a crosswalk process will need to follow will be down one of two avenues.

1. The conversion to FIPS City identifier from the provided City Identifier must work going into WA-Trans and also during translation back out.
2. The conversion to FIPS City identifier need only work during translation into WA-Trans.

Option 1

This will require there be some process to convert the provided city identifier to a FIPS identifier and then to again refer to that process while supplying data for a user request.

Pros:

1. This process will maintain the city identifier, originally used within the specific counties application to identify a city, for any user accessing WA-Trans.

Cons:

A. A crosswalk will have to be maintained in WA-Trans independently of the data provider process. This could involve provider maintenance in addition to the periodic WA-Trans data updates.
B. A crosswalk will have to be maintained for every provider submitting data. This will at least include every county in the state.
C. The original provider city identifier will have little significance to the user without a description file and even then will be of less universal use than a FIPS City identifier.
D. If a data user was given a choice of receiving the original City ID or FIPS ID it would involve additional application development. This would also involve explaining the necessity of making that choice, pros and cons.
E. Developing application process for a data user will be quite extensive to take into account the possibility of multiple provider crosswalk data being accessed for a single data request.

Implementation:

This process could be implemented in two ways.

- One could be at the translation level alone with a file (e.g. a .cvs (Excel), or XML) file sitting at a known location being reference during translation processes.
- Second could be tables within WA-Trans that are referenced during translation processes.

Each implementation will require maintenance with the second one involving database processes as well as data maintenance. Application maintenance will also be involved with processes for a data user requests in addition to the initial translation to WA-Trans.

Option 2

This will require there be some process to convert the provided city identifier to a FIPS City identifier.

Pros:

1. This process will only need to be maintained for initial translation into WA-Trans and not during any other data processes.
2. With good design it may be possible to create the process to download the original city identifier at a later date.

Cons:

A. A crosswalk will have to be maintained in WA-Trans independently of the data provider process. This could involve provider maintenance in addition to the periodic WA-Trans data updates.
B. A crosswalk will have to be maintained for every provider submitting data. This will at least include every county in the state.
C. The original City identifier will be lost during the translation process and not available during user download.

Implementation:

This process could be implemented in two ways.

- One could be at the translation level alone with a file (e.g. a .cvs (Excel), or XML) file sitting at a known location being reference during translation processes.
- Second could be tables within WA-Trans that are referenced during translation processes.

Each implementation will require maintenance with the second one involving database processes as well as data maintenance.

FIPS-County Identifier Crosswalk

Below is a proposed Crosswalk for use as a database table or a data file. This crosswalk only includes King and Pierce County City Codes.

County	City/Town	WSDOT County #	FIPS City	OFM Long City	FIPS County	Local County Identifier
King	Algona	17	01290	5301290WA	033	AL
King	Auburn (pt)	17	03180	5303180WA	033	AU
King	Beaux Arts Village	17	04895	5304895WA	033	BA
King	Bellevue	17	05210	5305210WA	033	BE
King	Black Diamond	17	06330	5306330WA	033	BD
King	Bothell (pt)	17	07380	5307380WA	033	BO
King	Burien	17	08850	5308850WA	033	BU
King	Carnation	17	10215	5310215WA	033	CA
King	Clyde Hill	17	13365	5313365WA	033	CH
King	Covington	17	15290	5315290WA	033	CO
King	Des Moines	17	17635	5317635WA	033	DM
King	Duvall	17	19035	5319035WA	033	DU

County	City/Town	WSDOT County #	FIPS City	OFM Long City	FIPS County	Local County Identifier
King	Enumclaw	17	22045	5322045WA	033	EN
King	Federal Way	17	23515	5323515WA	033	FW
King	Hunts Point	17	32755	5332755WA	033	HP
King	Issaquah	17	33805	5333805WA	033	IS
King	Kenmore	17	35170	5335170WA	033	KM
King	Kent	17	35415	5335415WA	033	KE
King	Kirkland	17	35940	5335940WA	033	KI
King	Lake Forest Park	17	37270	5337270WA	033	LF
King	Maple Valley	17	43150	5343150WA	033	MV
King	Medina	17	44725	5344725WA	033	ME
King	Mercer Island	17	45005	5345005WA	033	MI
King	Milton (pt)	17	46020	5346020WA	033	MT
King	Newcastle	17	48645	5348645WA	033	NE
King	Normandy Park	17	49415	5349415WA	033	NP
King	North Bend	17	49485	5349485WA	033	NB
King	Pacific (pt)	17	52495	5352495WA	033	PA
King	Redmond	17	57535	5357535WA	033	RM
King	Renton	17	57745	5357745WA	033	RN
King	Sammamish	17	61115	5361115WA	033	SM
King	SeaTac	17	62288	5362288WA	033	ST
King	Seattle	17	63000	5363000WA	033	SE
King	Shoreline	17	63960	5363960WA	033	SH
King	Skykomish	17	64855	5364855WA	033	SK
King	Snoqualmie	17	65205	5365205WA	033	SN
King	Tukwila	17	72625	5372625WA	033	TU
King	Woodinville	17	79590	5379590WA	033	WO
King	Yarrow Point	17	80150	5380150WA	033	YP
Pierce	Anderson Island	27			053	AI
Pierce	Auburn (pt)	27	03180	5303180WA	053	AU
Pierce	Bonney Lake	27	07170	5307170WA	053	BL
Pierce	Buckley	27	08570	5308570WA	053	BU
Pierce	Carbonado	27	09970	5309970WA	053	CA
Pierce	DuPont	27	18965	5318965WA	053	DU
Pierce	Eatonville	27	20260	5320260WA	053	EA
Pierce	Edgewood	27	20645	5320645WA	053	EW
Pierce	Fife	27	23795	5323795WA	053	FF
Pierce	Fox Island	27			053	FI
Pierce	Fort Lewis	27			053	FL
Pierce	Fircrest	27	23970	5323970WA	053	FR
Pierce	Gig Harbor	27	26735	5326735WA	053	GH
Pierce	Heron Island	27			053	HI
Pierce	King County	27	033		053	KC
Pierce	Lakewood	27	38038	5338038WA	053	LD
Pierce	McCord AFB	27			053	MC
Pierce	Milton (pt)	27	46020	5346020WA	053	ML
Pierce	Orting	27	52005	5352005WA	053	OR
Pierce	Pierce County	27			053	PC

Pierce	Pacific (pt)	27	52495	5352495WA	053	PF
Pierce	Puyallup	27	56695	5356695WA	053	PY
Pierce	Raft Island	27			053	RI
Pierce	Roy	27	60160	5360160WA	053	RY
County	**City/Town**	**WSDOT County #**	**FIPS City**	**OFM Long City**	**FIPS County**	**Local County Identifier**
Pierce	Ruston	27	60510	5360510WA	053	RU
Pierce	South Prairie	27	66045	5366045WA	053	SO
Pierce	Steilacoom	27	67770	5367770WA	053	SM
Pierce	Sumner	27	68435	5368435WA	053	SU
Pierce	Tacoma	27	70000	5370000WA	053	TA
Pierce	University Place	27	73465	5373465WA	053	UP
Pierce	Wilkeson	27	78925	5378925WA	053	WI

Appendix D – Schedule and Funding Document

1. Puget Sound Pilot Phase I
    a. King and Pierce County data set, translator, agreement points, database
    b. Funded Through USGS CAP Grant, WSDOT, King, Pierce, PSRC in-kind
    c. Scheduled to end USGS requirements December 31, 2006 (except for some reporting requirements)
    d. Try to add WSDOT, rail and ferry data after that (next spring)

2. Puget Sound Pilot Phase II
    a. Snohomish, Kitsap, possibly a tribe, PSRC, Sound Transit?
    b. Snohomish doesn't own its own data so may be an early (and probably not representative "no-data" pilot.
    c. Begin upon completion of Phase I (next spring likely), scheduled to take a year.
    d. Seeking funding from FHWA Traffic Records grants through the Washington Traffic Safety Commission (requested $125,000),
    e. Seeking a small USGS grant for NSDI specifically aimed at the Snohomish County "no-data" issue ($35,000),
    f. PSRC has expressed interest in providing resources (a while ago).

3. One-Road Pilot Phase I
    a. Data Scope – Benton, Franklin, Walla Walla (WA), Umatilla, Morrow (OR)
    b. Product – Test other translators (with other states); develop user interface portals for data providers and data users, integration requirements.
    c. Already underway (translation), scheduled to kick off PAC on Wednesday with meeting with Washington Counties. Begin detailed requirements for interfaces this fall. Scheduled to complete June 30, 2007,
    d. Funding through a Transportation Pooled Fund (partners Nebraska, Oregon, Ohio, and Tennessee. Seeking 5 more partners) (each partner contributes $30,000/year for 3 years),
    e. Also seeking funding from FHWA Traffic Records grant through the Washington Traffic Safety Commission (requested $125,000).

4. One-Road Pilot Phase II
    a. Data Scope – Clark, Cowlitz (WA), Columbia, Multnomah (OR),
    b. Products – utilities for integration, QA/QC, Security, LRS integration. May add metadata tools depending on funding,
    c. Scheduled for July 1, 2007 – June 30, 2009,
    d. Funding through a Transportation Pooled Fund (partners Nebraska, Oregon, Ohio, and Tennessee. Seeking 5 more partners) (each partner contributes $30,000/year for 3 years),
    e. Also seeking funding from FHWA Traffic Records grant through the Washington Traffic Safety Commission (requested $231,000).

5. No Data Pilot
    a. Scope – Select a jurisdiction with no data but a desire to start in GIS and develop a transportation layer for them, get them equipment and training,
    b. Negotiate a data sharing agreement in exchange,
    c. Scheduled for July, 2007 – June, 2008,
    d. Also seeking funding from FHWA Traffic Records grant through the Washington Traffic Safety Commission (requested $160,000),
    e. Still need to define how this would work.

6. Return on Investment
    a. Working through Ken Stallcup. We are close to completing WSDOT and having a positive return on investment. We have a few more groups to work with.
    b. We are looking at a major company that contracts with WSDOT for highway projects which use GIS. Hope to show that their use of WA-Trans will save WSDOT money.
    c. After that start looking at benefit to non-WSDOT partner.

*Note – Trying to figure out a way to speed up an implementation of WA-Trans statewide and do it in parallel to these activities so we can have a deliverable soon.